

A SHORT ACCOUNT OF THE DISEASE CALLED "AINHUM,"
WITH THE REPORT OF A CASE.¹

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It was my fortune, in the month of May last, to meet with a case of the rare disease called ainhum² at the Montreal General Hospital. So far as I know, it is the first case of the kind that has been met with in Canada. I am indebted to my house surgeon, Dr. H. S. Birkett, for the report of the case and the preparation of the specimen illustrating it.

CASE.—John B. S., æt. forty-seven, colored, native of North Carolina, and by occupation a teamster, was admitted into the Montreal General Hospital from Cornwall, Ontario, May 12, 1886, suffering from a painful toe which he wished to have removed.

History. Six years ago he noticed a small pimple on the outer side of the right little toe in the digito-plantar fold. He did not suffer any inconvenience or pain from the affection till four and a half years ago, when he noticed a constriction on pressure appearing in the digito-plantar fold. The foot was then slightly swollen and the toe was somewhat enlarged. With rest and poulticing the sore healed up and the pain and swelling of the foot disappeared, but the constriction remained and the toe continued enlarged. Four weeks ago the sore broke out again and the toe became very painful. The furrow, which had been increasing gradually, now rapidly deepened and the portion of toe beyond became much swollen and pained him greatly when he walked. Patient has always been healthy and lived in North Carolina till twenty years ago. No member of his family, to the best of his knowledge, ever had a similar affection of the toes.

Condition on entrance. Patient, a strong, healthy, full-blooded negro, complains of inability to walk much on account of the severe pain in the little toe of the right foot. Upon examination this toe is found to be very much constricted at the digito-plantar fold, the constriction almost completely encircling the toe—in fact, it looks as if a string had

¹ Read before the Canada Medical Association, Quebec, August, 1886.

² This is the negro name for this affection, and means "to saw."



been tied tightly round it. The portion of toe beyond the furrow consists of a soft ovoid mass, and is much larger than the normal toe. Nail quite healthy. The toe is very mobile and movement causes excessive pain. On the plantar aspect of the constriction is a small granulating sore which, on probing, is very sensitive. Foot not swollen. No other toe of either foot affected. Left little toe carefully examined and found perfectly normal.

On the 14th of May the toe was amputated at the metatarso-phalangeal joint, and the wound, under dry dressing and iodoform, rapidly healed.

On dissection the amputated toe appeared to consist of much thickened skin and fibrous tissue. Adipose tissue normal. The bones presented a remarkable condition. The proximal phalanx was much atrophied and ended in a fine point, the whole bone looking something like a claw; the joint between it and the middle phalanx had disappeared; the middle phalanx was much reduced in size and eroded at its proximal end; no distinct articulation could be made out between it and the ungual phalanx. This latter phalanx, though of proper length, was excessively thin and light.



Showing the line of constriction and the condition of the three phalanges.

The metatarso-phalangeal joint was perfectly healthy, though the end of the phalanx entering into the joint was somewhat lessened in size and misshapen, but the articular surface was of full size.

The disease called "ainhum" is one of great rarity; it is peculiar to the dark races, not only to negroes, as was formerly supposed, for it occurs also in India among the native Hindoos. A very interesting report of four cases, by Dr. D. G. Crawford, of the Indian Medical Service, has lately appeared.¹ Dr. Crawford found that the disease was met with in about one out of every 2500 surgical cases treated at his Dispensary at Calcutta. In one of his cases the great toe was affected, in one the fourth toe, and in two the fifth toe. In no case was there any

¹ Edinburgh Medical Journal, June, 1886.

appearance of symmetry. The disease at one time was thought to attack the little toe only, but later observers have seen it in the fingers and even in the legs. It is said to occur in intrauterine life, and to be the most frequent cause of congenital amputation.¹ Only very few cases have thus far been reported in North America; in South America, however, it is comparatively common in the African negroes, but rarer in those born in Brazil. It is said to be a common affection on the West coast of Africa.² The disease was first clearly described by Dr. J. F. da Silva Lima, of Bahia, Brazil, in 1867.³ In the cases described by him the affection was confined to the little toes of adults, but lately others have described it as occasionally being seen in children, and also, as mentioned above, affecting other toes, fingers, and even limbs.

Dr. Silva Lima found the disease to be more common in men than women; it is also said to be more prevalent in certain families, showing its hereditary, and, hence, constitutional nature. The only cases reported in North America are those by Drs. Hornaday and Pittman. In Dr. Hornaday's report of his case,⁴ he refers to one previously reported by Dr. N. J. Pittman, in 1880, to the North Carolina Medical Society. It was the first case Dr. Pittman had met with in a practice extending over forty-two years.

Dr. Hornaday's case occurred in a negress aged ten. It is curious that the man whose case is narrated above is a native of North Carolina.

As a rule, the affection commences as a furrow on the line of the digito-plantar fold of the little toe; this furrow gradually deepens, and the end of the toe enlarges to double or treble its normal size, having a spherical shape. Generally there is no pain, inflammation, or ulceration; but when there is ulceration in the furrow, as in my case, the pain is excessive.⁵ As the furrow goes on deepening, it encircles the toe till the end is held by only a small pedicle. The toe does not lose its sensation, but from its great mobility it is subject to injury and painful knocks, and the patient in consequence applies for relief. The toe is generally removed at the point of strangulation by knife or ligature. If left alone, it falls off itself. The wound always heals rapidly. It is asserted that the disease can be arrested in the early stages by free longitudinal incisions cutting through the constricting fibres.

The course of the disease is very slow, lasting some eight to ten years. According to Silva Lima, the disease is usually asymmetrical, the affection in one toe being much further advanced than in the other. The

¹ C. Stedman in Buck's Reference Handbook, vol. i. p. 91.

² Dr. Rolf Leslie, who has lately returned from the Congo, where he spent two years, tells me that he never met with a case whilst there.

³ *Gazeta Medica di Bahia*, Anno I., No. 13, p. 146, quoted by H. Weber, *Path. Soc. Trans.*, 1867, vol. xviii.

⁴ *North Carolina Medical Journal*, September, 1881.

⁵ Dr. Crombie, *Indian Medical Gazette*, quoted by Dr. Crawford, in *Edin. Med. Journ.*, June, 1886.

phalanges atrophy and are replaced by fibrous tissue and the joints disappear. The skin is much thickened, and there is great hypertrophy of the papillary layer; the bloodvessels are also thickened and become larger.¹

The cause of the disease is not known. The fact that sensation is not lost distinguishes it from leprosy, as does, also, its localization. It is probable, from the great atrophy of bone which takes place, that the disease is of nervous origin, and is due to some trophic disturbance of the nerve centres. Microscopic sections of removed toes present no peculiar appearances; so much is this the case that when a report on a toe affected with "ainhum" was presented to the American Dermatological Society, in 1880, by a previously appointed committee, they suggested the probability "that the constricting ring was produced artificially by tying a thin ligature round the toe, which, if not continuously encircling it, was worn for long periods of time."² No doubt, if a portion of the removed toe were placed in the hands of a skilled bacteriologist an "ainhum" bacillus would be found, which, when inoculated, would produce a similar disease in rabbits and mice. The experiments, of course, should not be performed with *white* mice or rabbits. I regret exceedingly that the soft parts of the toe removed by me were not preserved for purposes of investigation.

¹ Dr. H. Weber, Path. Soc. Trans., 1867, vol. xviii, p. 279. In this article beautiful plates of microscopic sections are given.

² Hyde, Diseases of the Skin, p. 421